AMENDMENTS TO THE CLAIMS

The listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a computing system that has access to a set of control points, the set of control points for generating an outline of a graphical object, the outline being utilized to determine how the graphical object is rendered on a pixel grid, the location of some control points being constrained to pre-determined locations, a computerized method for dynamically determining one or more directions of freedom for a control point such that the control point can be moved to comply with a corresponding one or more constraints, the method comprising:

identifying a first function that represents a first constraint, solutions to the first function indicating compliance with the first constraint;

calculating, based on the location of the control point and the identified first function, that the control point does not comply with the first constraint; and

automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint such that movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints, wherein automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint comprises the acts of:

measuring a first angle between a first direction of compliance and a first axis;

measuring a second angle between the first direction of compliance and a second axis; and

determining that the first angle is smaller than the second angle.

2. (Original) The method as recited in claim 1, wherein the identifying a first function that represents a first constraint, solutions to the first function indicating compliance with the first constraint comprises processing instructions included in a set of control points.

3. (Original) The method as recited in claim 1, wherein identifying a first function that represents a first constraint comprises identifying a first function that represents one of a distance constraint and a proportion constraint.

4. (Original) The method as recited in claim 1, wherein calculating, based on the location of the control point and the identified first function, that the control point does not comply with the first constraint comprises determining that using the control point as input to the first function does not result in a value that approximates a zero for the first function.

5. (Currently Amended) The method as recited in claim 1, wherein automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint comprises determining that the first direction of is to be in the direction of an X axis.

6. (Currently Amended) The method as recited in claim 1, wherein automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint comprises determining that the first direction of is to be in the direction of an Y axis.

7. (Original) The method as recited in claim 1, further comprising:

moving the control point in the first direction of freedom to comply with the first constraint.

8. (Cancelled)

9. (Currently Amended) The method as recited in claim ~~8~~1, further comprising:

identifying a second function that represents a second constraint, solutions to the second function indicating compliance with the second constraint; and

setting a second direction of freedom perpendicular to the first direction of compliance, the second direction of freedom indicating a direction in which the control point can move to comply with the second constraint, and such that the first direction of compliance is used to set the second direction of freedom.

10. (Original) The method as recited in claim 9, wherein setting the direction of a second direction of freedom perpendicular to the first direction of compliance comprises setting the second direction of freedom to the direction of the second axis.

11. (Original) The method as recited in claim 10, wherein setting the second direction of freedom to the direction of the second axis comprises setting the second direction of freedom to the direction of an X axis.

12. (Original) The method as recited in claim 10, wherein setting the second direction of freedom to the direction of the second axis comprises setting the second direction of freedom to the direction of a Y axis.

13. (Original) The method as recited in claim 9, wherein setting the second direction of freedom perpendicular to the first direction of compliance comprises setting the second direction of freedom to a diagonal direction.

14. (Original) The method as recited in claim 9, further comprising:

moving the control point along the second direction of freedom to comply with the second constraint in a manner that does not result in non-compliance with the first constraint.

15. (Original) The method as recited in claim 1, further comprising:

receiving a set of control points representing a character of text.

16. (Currently Amended) In a computing system that has access to a set of control points, the set of control points for representing an outline of a graphical object, a method for setting the direction of freedom vectors for one or more of the controls points, the method comprising:

for each control point in the set of control points, determining the number of constraints the control point is to comply with;

when the control point is to comply with one or more constraints:

identifying a first projection vector corresponding to a first constraint, compliance with the first constraint being determined by measuring a distance from the control point, in the direction of the first projection vector, to another portion of the outline or to a pre-determined location;

automatically determining a first direction of freedom in which the control point can be moved to comply with the first constraint by at least determining that the direction of the first projection vector is closer to the direction of a first axis than to the direction of a second axis, the first axis being perpendicular to the second axis; and

setting the direction of a first freedom vector to the direction of the first axis, the first freedom vector indicating a direction in which the control point can move to comply with the first constraint.

17. (Original) The method as recited in claim 16, wherein for each control point in the set of control points determining the number of constraints the control point is to comply with comprises for each control point in a set of control points representing a character of text an act of determining the number of constraints the control point is to comply with.

18. (Original) The method as recited in claim 16, wherein determining the number of constraints the control point is to comply with comprises determining that the control point is to comply with one constraint.

19. (Original) The method as recited in claim 16, wherein determining the number of constraints the control point is to comply with comprises determining that the control points is to comply with two constraints.

20. (Currently Amended) A computer program product for use in a computing system that has access to a set of control points, the set of control points for generating an outline of a graphical object, the outline being utilized to determine how the graphical object is rendered on a pixel grid, the location of some control points being constrained to pre-determined locations, the computer program product for implementing a computerized method for dynamically determining one or more directions of freedom for a control point such that the control point can be moved to comply with a corresponding one or more constraints, the computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the computing system to perform the following:

identify a first function that represents a first constraint, solutions to the first function indicating compliance with the first constraint;

calculate, based on the location of the control point and the identified first function, that the control point does not comply with the first constraint; and

determine a first direction of freedom in which the control point can be moved to comply with the first constraint such that movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints, wherein determining a first direction of freedom in which the control point can be moved to comply with the first constraint comprises:

measuring a first angle between a first direction of compliance and a first axis;

measuring a second angle between the first direction of compliance and a second axis; and

determining that the first angle is smaller than the second angle.